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\*\*\*\* HOW TO OBTAIN DOCUMENTS FROM THE OFFICE OF WATER \*\*\*\*  
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A copy of the supporting documents and comments listed in the index are available for review and photocopying at EPA's Water Docket, 401 M Street, SW., Room 2616 Mall, Washington, DC.

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I. Health Effects from Exposure to High Levels of Sulfate in Drinking Water Study and Sulfate Workshop.

Notice of Data Availability.

W-99-01

**(February 11, 1999)**

- A. Federal Register Notice
- B. References Cited in the Preamble
- C. Other Supporting Documents
- D. Public Comments
  - 1. Comments received or postmarked by **(May 12, 1999)**
  - 2. Comments received or postmarked after **(May 12, 1999)**

W-99-01

Sulfate-NODA

I-A

- A. Federal Register Notice
  - 1. Federal Register Notice. U.S. Environmental Protection Agency. Health Effects from Exposure to High Levels of Sulfate in Drinking Water Study and Sulfate Workshop.

Notice of Data Availability. February 11, 1999. Volume 64, Number 28. pp.7028-7030.

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I-B

B. References Cited in the Preamble

1. USEPA. July 19, 1979. National Secondary Drinking Water Regulations. Federal Register Volume 44, Number 140 (42195). 10 pp. **See Phase V, MCLG & MCL Proposals, I-A2.3.**
2. USEPA. October 5, 1983. National Primary Drinking Water Regulations; Advance Notice of Proposed Rulemaking (ANPRM). Federal Register Volume 48, Number 194. 45502-45521.
3. USEPA. November 13, 1985. National Primary Drinking Water Regulations; Synthetic Organic Chemicals, Inorganic Chemicals and Microorganisms: Proposed Rule. Federal Register Volume 50, Number 219. Part IV. 46936-47025. **See Phase II, RMCL-PRO, II-A.1.**
4. USEPA. July 25, 1990. National Primary Drinking Water Regulations; Synthetic Organic Chemicals and Inorganic Chemicals; Proposed Rule. Federal Register Volume 55, Number 143. Part II. 30370-30448. **See Phase V, MCLG & MCL PRO, I-A1.1.**
5. USEPA. December 20, 1994. National Primary Drinking Water Regulation Implementation. Federal Register Volume 59, Number 243. 65578-65604. **See V-D, IV-A1.1.**
6. USEPA. March 2, 1998. Announcement of the Drinking Water Contaminant Candidate List; Notice. Federal Register Volume 63, Number 40. 10273-10287. **See W-97-11, CCL, II-A.1.**
7. USEPA. 1999. Health Effects from Exposure to Sulfate in Drinking Water Workshop. Sponsored by Centers for Disease Control and Prevention. Atlanta, GA. September 28, 1998. EPA 815-R-99-002. 45 pp.
8. USEPA. 1999. Health Effects from Exposure to High Levels of Sulfate in Drinking Water Study. Office of Ground Water and Drinking Water. EPA 815-R-99-001. 26 pp.

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I-C

C. Other Supporting Documents

1. USEPA. Sept. 10, 1998. Notice of Public Meeting: Workshop on Sulfate in Drinking Water; Notice of Public Meeting. Federal Register Volume 63, Number 175. 48503.
2. CDC. Sept. 28-29, 1998. Sulfate Workshop. Agenda. Wyndham Garden Hotel, Atlanta, GA. 2 pp.
3. CDC. Sept. 28-29, 1998. Sulfate Workshop. Relevant Research Literature. Wyndham Garden Hotel, Atlanta, GA. Research Literature provided to participants at Sulfate Workshop. 76 pp.
  - a. Anderson, D.M. and S.C. Stothers. (1978). Effects of Saline Water High in Sulfates, Chlorides, and Nitrates on the Performance of Young Weanling Pigs. *Journal of Animal Sciences* 47: 900-907.
  - b. Chien, L., H. Robertson, and J.W. Gerrard. (1968). Infantile Gastroenteritis Due to Water with High Sulfate Content. *Canadian Medical Association Journal* 99: 102-104.
  - c. Cocchetto, David M. and Gerhard Levy. (1981). Absorption of Orally Administered Sodium Sulfate in Humans. *Journal of Pharmaceutical Sciences* 70(3): 331-333.
  - d. Digesti, R.D., and H.J. Weeth. (1976). A Defensible Maximum for Inorganic Sulfate in Drinking Water of Cattle. *Journal of Animal Science* 42(6): 1498-1502.
  - e. Esteban, Emilio, Carol H. Rubin, Michael A. McGeehin, W. Dana Flanders, Michael J. Baker, and Thomas H. Sinks. (1997). Evaluation of Infant Diarrhea Associated with Elevated Levels of Sulfate in Drinking Water: A Case-Control Investigation in South Dakota. *International Journal of Occupational and Environmental Health* 3(3): 171-176.
  - f. Gomez, Guillermo G., Robert S. Sandler, and Elston Seal, Jr. (1995). High Levels of Inorganic Sulfate Cause Diarrhea in Neonatal Piglets. *Journal of Nutrition* 125: 2325-2332.
  - g. Heizer, William D., Robert S. Sandler, Elston Seal, Jr., Sharon C. Murray, Marjorie G. Busby, Barbara G. Schliebe, and Susan N. Pusek. (1997). Intestinal Effects of Sulfate in Drinking Water on Normal Human Subjects. *Digestive Diseases and Sciences* 42(5): 1055-1061.

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I-C

C. Other Supporting Documents

- h. Moore, Edward W. (1952). Physiological Effects of the Consumption of Saline Drinking Water. *Bulletin, Water Supply*, Appendix B: 221-227.
  - i. Morris, Marilyn E. and Gerhard Levy. (1983). Absorption of Sulfate from Orally Administered Magnesium Sulfate in Man. *Journal of Toxicology – Clinical Toxicology* 20(2): 107-114.
  - j. Patterson, D.W., R.C. Wahlstrom, G.W. Libal, and O.E. Olson. (1979). Effects of Sulfate in Water on Swine Reproduction and Young Pig Performance. *Journal of Animal Sciences* 49: 664-667.
  - k. Peterson, Norman L. (1951). Sulfates in Drinking Water. *Official Bulletin: North Dakota Water and Sewage Works Conference* 18(10&11): 6-11.
  - l. U.S. Environmental Protection Agency (EPA). (1992). EPA Workshop on Sulfates. May 20, 1992.
  - m. Veenhuizen, M.F., G.C. Shurson, and E.M. Kohler. (1992). Effect of Concentration and Source of Sulfate on Nursery Pig Performance and Health. *JAVMA* 201(8): 1203-1208.
  - n. Wurzner, H.P. (1979). Exposure of Rats During 90 Days to Mineral Water Containing Various Amounts of Sulfate. *Z. Ernährungswiss* 18: 119-127.
4. Battelle. 1998. Sulfate Workshop - Literature Review. Prepared by Battelle, Baltimore, MD, for the Centers for Disease Control and Prevention, Atlanta, GA, September 28, 1998. 9 pp.

Log of Comments\*

Health Effects from Exposure to High Levels of Sulfate in Drinking Water Study and Sulfate Workshop. Notice of Data Availability (W-99-01)  
(in the Docket Files "W-99-01, Sulfate NODA, I-D1." precedes each of the following log numbers)

<u>Log #</u>	<u>Date Recd</u>	<u>Date of Letter</u>	<u>Name</u>	<u>Organization Represented</u>	<u>Street Address</u>	<u>City / State</u>	<u>Zip</u>	<u>Total #Pgs</u>	<u>#Att.</u>
01	04/15/99	04/15/99	Nettie H. Myers & D.B. Hollingsworth	State of South Dakota, Dept. of Environment & Natural Resources	Joe Foss Bldg. 523 East Capitol	Pierre, SD	57501 4 0		
02	04/22/99	04/22/99	Francis J. Schwindt	North Dakota Dept. of Health	P.O. Box 5520	Bismarck, ND	58506	2	0
03	05/07/99	05/05/99	David Y. Terry	Commonwealth of MA, Dept. of Environmental Protection	One Winter Street	Boston, MA	02108	2	4
04	05/11/99	05/11/99	John H. Sullivan	American Water Works Association	1401 New York Ave., NW, Suite 640	Washington, D.C.	20005	4	0
05	05/11/99	05/11/99	Chuck Shipley	Arizona Mining Association	2702 N. Third Street, Ste. 2015	Phoenix, AZ	85004 8	8	
06	05/12/99	<b>e-mail</b>	Vanessa M. Leiby	Association of State Drinking Water Administrators (ASDWA)	1120 Connecticut Ave., S.W., Suite 1060	Washington, D.C.	20036	3	0
07	05/12/99	<b>e-mail</b>	Linda McCarty	Missouri Dept. of Natural Resources	P.O. Box 176	Jefferson City, MO	65102	2	0
08	05/12/99	05/12/99	Krishna Parameswaran	ASARCO, Inc.	180 Maiden Lane	New York, NY 10038	5 0		
09	05/12/99	05/12/99	Lawrence J. Corte	Phelps Dodge Corporation	2600 N. Central Ave.	Phoenix, AZ	85004 3	0	
10	05/07/99	05/06/99	William C. Hiatt	BASF Corporation	P.O. Box 669	Enka, NC	28728	1	0
11	05/11/99	05/10/99	Randy Deskin	CYTEC Industries, Inc.	Five Garret Mountain Plaza	West Paterson, NJ	07424 14	0	
12	05/12/99	05/12/99	Diane VanDe Hei	Assn. of Metropolitan Water Agencies	1717 K St., N.W., Ste. 801	Washington, D.C.	20036	1	0

\*Comments received or postmarked by **May 12, 1999**

Log of Comments\*

Health Effects from Exposure to High Levels of Sulfate in Drinking Water Study and Sulfate Workshop. Notice of Data Availability (W-99-01)  
(in the Docket Files "W-99-01, Sulfate NODA, I-D2." precedes each of the following log numbers)

<u>Log</u> <u>#</u>	<u>Date</u> <u>Recd</u>	<u>Date of</u> <u>Letter</u>	<u>Name</u>	<u>Organization Represented</u>	<u>Street Address</u>	<u>City / State</u>	<u>Zip</u>	<u>Total</u> <u>#Pgs</u>	<u>#Att.</u>
01	05/14/99	05/12/99	Karen Bennett	National Mining Association	1130 17 <sup>th</sup> St., N.W.	Washington, D.C.	20036 5	0	

\*Comments received or postmarked after **March 12, 1999**